



Environmental Health Information

St. Regis Superfund Site Community Health Concerns

November 2005

What is the history of this site?

The St. Regis Paper Company Superfund Site is a former wood preserving facility that operated from 1957 to 1985 in the City of Cass Lake on the Leech Lake Reservation. Groundwater, surface water, sediment and soil on and near the site are contaminated as a result of the wood preserving process and waste disposal activities. While cleanup actions have occurred in the past, dioxin contamination remains on site in areas that are residential or easily accessed by people.

What is a Health Consultation report?

Since 2002, the Leech Lake Band of Ojibwe (LLBO), the Minnesota Department of Health, and the Agency for Toxic Substances and Disease Registry have been working together to evaluate site contamination and ensure that the community's health is protected. To date, Health Consultation reports on the potential for people to be exposed (come into contact) to site contaminants through soil, surface water, groundwater and sediments have been written; possible exposure through fish consumption is currently being evaluated.

This information sheet is a summary of the report on community health concerns and health information. The Health Consultation report is based on interviews with former employees, current and former residents, meetings with community groups and health care professionals, site related public meetings, as well as a review of the available health statistics for the 56633 zip code area.



How did the site become contaminated?

Both creosote and pentachlorophenol were used to treat the wood. The process of pressure treating the wood with steam required large amounts of water. In the early years, the wastewater had little treatment before passing through a series of ponds. Leftover sludge from the wastewater was taken to the city dump and burned. Some improvements were made in 1974, but wastewater was also sprayed on the ground and dumped on the facility and vault properties. From 1980 until the facility closed in 1985, the waste left over after water evaporated was hauled to a hazardous waste site.

The eastern edge of the site was used as a landfill where timber waste, metal scraps and other building material wastes were deposited. This area was not fenced and there are reports of children playing on it. During the years of operation, solid wastes were burned in two tall open burners on site. These wastes included the containers in which the pressure treatment chemicals were transported to the site.

How has the site been cleaned up?

From 1985 to 1988, the owner at that time, under government supervision, dug up and removed soil that was clearly seen to be contaminated. The soil and sludge were placed in an area on the southwest corner of the site that was constructed to hold the contaminated soil and was then covered with clean soil. Because the contamination moved from the surface down through the soil into the groundwater, water pump out and treatment systems were built both at the site and at the city dump. Nearby residents who had their own wells were put on the city water supply system to ensure that they had clean water.

Government agencies have continued to look at the site and the contamination to see if the clean up was complete. Soil sampling in 2001 of both the facility site and neighbors' yards found dioxins and other chemicals. In June 2004, after more soil sampling was completed, the EPA removed soil from city-owned land and neighbors' yards where the level of dioxins was found to be more than 1,000 parts per trillion (ppt). Currently the EPA is looking at sampling results from soil, groundwater, Fox Creek, Pike Bay, fish and other animals to see if more clean up needs to be done to protect people's health and the environment.

What do we know about past exposures to workers and neighbors?

To workers -- In interviews with government staff, former workers described mixing pentachlorophenol with #2 fuel oil, unloading liquid creosote from railcars, crawling inside the treatment containers and working with the treated wood while only wearing cloth gloves and coveralls for protection. While workers did receive medical exams during the last years the facility operated, they did not receive copies of those exams.

To neighbors -- Neighbors and former residents of the site described ways in which they came into contact with chemicals from the site during the years of operation. Children swam in the wastewater that overflowed from the ponds into their yards and streets. They also played on the landfill. Some people who grew up in the area reported making and eating mud pies from soil that may have been contaminated.

People also reported smelling strong odors from freshly treated wood that was stacked around three sides of their yards. This practice of storing freshly treated wood around residences was reported in a July 22, 1976 memo by the Minnesota Pollution Control Agency (MPCA) and is shown in historical aerial photos. People may also have been exposed to chemicals in the smoke from the two large, open burners.

In 1985, testing of well water from homes on the site found chemical contamination, all below the State drinking water criteria. All homes, except for one, were connected to the city water supply. Use of contaminated well water in traditional sweat lodges may have exposed people to chemicals that easily evaporate into the air (volatile organic chemicals). Although levels of chemicals were low, exposure also depends on the amount of time spent in the sweat lodge. More information on exposure from water is available in the MDH Public Health Assessment on Groundwater, Surface water and Sediments.

What do we know about current exposures? How can people be exposed today?

The residue of contamination left in the soil is still a concern today. MDH has provided advice to people living and working on the site in a letter to those who live on the site and in an information sheet about steps that people can take to reduce their contact with the contaminated soil and dust until more clean up is completed. The EPA has plans to reduce exposures to dust inside homes by housecleaning and other means, until a permanent remedy is decided.

MDH is concerned about life-term exposure to contaminated soils, particularly for children who may play in dioxin-contaminated soil. All people should stay off the former treatment areas of the site and children should be provided with safe play areas with clean soil.

If there are any open wells on the site, drinking the groundwater from under the site could expose people to contaminants. Any open wells drawing groundwater from under the site should be properly sealed to prevent these exposures. Exposure from surface water in Fox Creek, Pike Bay and the channel is not likely to be a concern. However, contact with the sediments in both Fox Creek, Pike Bay and the channel is a way for people to be exposed to site contaminants.

Exposure through eating fish, other wildlife, or plants is still being evaluated. People are advised to avoid harvesting plant materials from contaminated areas and to garden in raised beds of clean soil in their yards.

How are the health problems of current and former residents related to the site?

Many people have expressed concerns that they, their family or neighbors have health problems that might be caused by chemicals at the site. They asked MDH to study the available health information to see if there are more deaths or disease in Cass Lake than in other areas of Minnesota.

Studying the relationship between exposure to hazardous chemicals in the environment and diseases, both non-cancer and cancer, often does not give clear answers. For example, though it is clear that both workers and neighbors were exposed to chemicals at the site, we do not know how high the exposures were. We do know that workers had higher levels of exposure than neighbors. And we know that some of the health effects and disease mentioned by people can be caused by the chemicals found at this site. But, some of the diseases have many causes or unknown causes, so we cannot say without doubt that the site chemicals caused these diseases.

Another issue that makes linking disease with exposure difficult is that Minnesota does not have a way of tracking diseases throughout state, except for cancer and infectious diseases. This means that we cannot say if certain health problems are more frequent in Cass Lake. A Birth Defects Information System is being developed and will be of help in similar situations in the future.

What about cancer?

People are especially concerned that there is an excess of cancer among people who lived or are living at the site. Dioxin, one of the chemicals still found at the site, is known to cause cancer in humans. Pentachlorophenol and creosote also may cause cancer.

The Minnesota Cancer Surveillance System (MCSS) and the Minnesota Center for Health Statistics (MCHS) are the two ways that we track new cases of cancer (incidence) and death from cancer (mortality) in Minnesota. Any time a new case of cancer is diagnosed, it must be reported to the MCSS. From years of tracking cancers, we know that about ½ of all Minnesotans will be diagnosed with cancer at some point in their lifetime. About ¼ of all Minnesotans will die from cancer, making it the second most common cause of death.

MCSS records information about new cases along with the person's address at the time of diagnosis. That means that if someone lived at the site for decades, but moved and was diagnosed somewhere else, their cancer would be included in the tracking for their new residence and not in Cass Lake. Likewise, because cancer is a progressive disease and often takes years to develop, someone could experience that factors that cause cancer in another zip code, but be living in the Cass Lake zip code at the time of diagnosis.

To see if there is an excess of cancer, the MCSS compares the number of cancers for a certain zip code with the number that would be expected in a similar zip code in Minnesota. In the zip code 56633 (greater Cass Lake) there were 197 newly diagnosed cancers from 1993-2002 when we would have expected 171. There were more cases of lung, kidney and oral cancers in men and women, and cervical and breast cancers in women than were expected. However, the increased cancers may have many causes, including exposures to St. Regis chemicals, but also related to factors such as diet and smoking.

The MCSS also looks at cancer in different races and ethnic groups. In Cass Lake, the differences in cancer between American Indians and Whites are similar to the rest of Minnesota. New cases of lung and cervical cancer are higher for American Indians. Deaths from all cancers, particularly lung cancer in men, are higher for American Indians. Cancer rates in Cass Lake may reflect these differences.

Should I ask my doctor to test my body for dioxins?

MDH is not recommending that people be tested for dioxins. Most Americans have some level of dioxin in their blood, just from eating a normal diet. Many years have passed since workers and neighbors had high exposures to dioxin. Without continuing high exposures, the level of dioxin in the body decreases over time. If people were tested at this time, it would be difficult to say whether the level is due to diet or the site. There is no medical treatment that will reduce the level of dioxin in the body.

If you are experiencing symptoms, MDH does recommend that you talk with your health care professional. MDH is providing information on the site chemicals, exposures and health effects to the health care professionals who serve Cass Lake.

To obtain a copy of the full Health Consultation, call the MDH phone number listed below.

For more information contact:

MDH/Site Assessment and Consultation: (651) 201-4897 or 1 (800) 657-3908, press "4" and leave a message.

To request this document in another format, call (651) 201-5000, TDD: (651) 201-5797 or, the Minnesota Relay Service at 1 (800) 627-3529

This information sheet was prepared in cooperation with the U.S. Agency for Toxic Substances and Disease Registry.

